Curriculum Vitae et Studiorum

Luciano Teresi

Dept. of Mathematics & Physics, Università Roma Tre
Via della Vasca Navale 84, 00146 Roma, Italy

e-mail: teresi@uniroma3.it

Web page: https://sites.google.com/personale.uniroma3.it/teresi/home

---

Education

- Ph.D. in *Theoretical and Applied Mechanics* at Sapienza, Università di Roma, 1996.
- Graduated with honors (magna cum laude) in *Aeronautical Engineering* at Sapienza, Università di Roma, 1991.

Position

- Professor of Mathematical Physics at Dept. of Mathematics & Physics, Università Roma Tre.
- Coordinator of the *Lab for Computational Sciences*, Università Roma Tre, started 2018.
- Member of the Dept. of Mathematics & Physics, Università Roma Tre, since 2013.
- Member of the Dept. of Structures, Università Roma Tre, 2003-2012.
- Coordinator of LaMS,*Modelling & Simulation Lab*, Università Roma Tre, 2010-2018.
- Member of the Dept. of Sciences of Civil Engineering, Università Roma Tre, 1998-2002;
- Teaching Assistant, Università degli Studi di Roma "Tor Vergata", Rome, 1995-1998, for the courses in Rational Mechanics and Continuum Mechanics.

Appointments & Visiting Positions

- **VTech, Virginia Polytechnic Institute and State University, USA**: visiting professor at Dept. of Biomedical Engineering and Mechanics.
  Fall 2018, project: step-wise straining of biological tissues.
  Winter 2018, project: constitutive response of anisotropic biological tissues.
  Fall 2016, project: swelling phenomena in soft matter.
  Fall 2015, project: mathematical modeling of muscle.
- **University of Texas at Austin, USA**: visiting scholar sponsored by 'J. Tinsley Oden Faculty Fellowship Research Program' at the Institute for Computational Engineering and Sciences - ICES:
  Summer 2010, project: Functional Architecture of the Ventricular Myocardial Band.
  Summer 2007, project: Dynamical aspects related to the morphology of viruses structures.

- **SISSA-ISAS** (International School for Advanced Studies), Trieste, Italy: visiting scholar sponsored by 'Functional Analysis & Application Sector'; October-December 2006, April-May 2007, October-December 2007, October-December 2008, May-June 2009, October-December 2009, May-June 2010.
  Project: Phase transitions in soft nematic elastomers.

- **University of Minnesota, Minneapolis, USA**: visiting scholar sponsored by IMA (Institute for Mathematics and its Applications), during the thematic year 'Mathematics of Materials and Macromolecules'; April-June 2005.
  Project: Growth and material remodelling models in continuum mechanics.

- **Columbia University, New York City, USA**: visiting scholar at Department of Civil Engineering, March-May 2002.

- **Max Planck Institute for Mathematics in the Sciences, Leipzig, Germany**: visiting scholar sponsored by Max Planck Gesellschaft, November 1998 - February 1999.

Organisation of Conferences & Workshops

- INdAM Meeting "Active soft matter: from mechanobiology to smart devices" at Il Palazzone, September, 21-25, 2020, Cortona, Italy.

- INdAM Meeting "Mathematical Physics of Living Systems" at Il Palazzone, August 2017, Cortona, Italy.

  Web page: https://cortona2017.weebly.com

- 19h International Conference on Finite Elements in Flow Problems - FEF 2017, April, 2017, Sapienza, University of Rome. Italy.

  Web page: http://congress.cimne.com/FEF2017/frontal/default.asp

- "Mathematical Physiology of Cardiac, Skeletal and Smooth Muscles", at Centro di Ricerca Matematica Ennio De Giorgi, October 2015, Pisa, Italy.

  Web page: http://www.crm.sns.it/event/343/

- "Just Solve It", a series of Workshops on Computational Sciences at Roma Tre University, November 2014 - May 2015, Roma, Italy.

  Web page: http://host.uniroma3.it/laboratori/lams/JSI/Welcome.html

- "Workshop on Mechanics in Biology", at GSSI (Gran Sasso Science Institute), June, 6-9 May 2014, L'Aquila, Italy.

  Web page: host.uniroma3.it/laboratori/lams/Aquila2014/Home.html

- INdAM Meeting "The Mathematics of Cells and Tissues", at Il Palazzone, September 2013, Cortona, Italy.

  Web page: host.uniroma3.it/laboratori/lams/Cortona2013/Home.html

- "Mathematics and Mechanics of Biological Assemblies and Soft Tissues", workshop PRIN 2009, February 2013, Roma, Italy

  Web page: host.uniroma3.it/laboratori/lams/PRIN2009/Home.html

Affiliation

- INdAM-GNFM, Italian Research Group in Mathematical Physics.
- SIAM, Society for Industrial and Applied Mathematics.
- APS, American Physical Society
- ESB, European Society of Biomechanics.
- Society for Natural Philosophy.

Main research lines

- Soft Matter: dynamics of hydrogels; stress-free morphing, shape from metric; soft elasticity of nematic elastomers.
- Mechano-biology: growth and remodeling of living tissues; mechanical models for muscles,
- Shape analysis: quantification of shape differences in soft matter; transport of deformation; motion mapping.

Research Projects

- as coordinator
  - "Mathematics of active materials: From mechanobiology to smart devices", research grant sponsored by Italian Minister of University and Research, PRIN-2017, coordinator of the research unit of Roma Tre.
  - "Mathematical modelling of bio-hybrid and bio-inspired soft robots" Researchers Grant sponsored by INdAM-GNFM (National Institute for Mathematics-National Group on Mathematical Physics), 2016.
  - "Mathematical modeling of shape change in soft tissues", Researchers Grant sponsored by INdAM-GNFM (National Institute for Mathematics-National Group on Mathematical Physics), 2014.
  - "Material Remodelling in Soft Matter", Young Researchers Grant sponsored by INdAM-GNFM (National Institute for Mathematics-National Group on Mathematical Physics), 2011.
  - "Mathematics and Mechanics of Biological Assemblies and Soft Tissues", research grant sponsored by Italian Minister of University and Research, PRIN-2009, coordinator of the research unit of Roma Tre.

  - "Mathematical modelling of electro-active materials", Young Researchers Grant sponsored by INdAM-GNFM (National Institute for Mathematics-National Group on Mathematical Physics), 2008.
  - "Material remodelling and microstructures in ferro-magnets and polymeric materials", Young Researchers Grant sponsored by INdAM-GNFM (National Institute for Mathematics-National Group on Mathematical Physics), 2006.

- as participant

  - "Mechanical insights into volume overloaded left heart: two-chamber diastolic-systolic functional diseases" Sapienza, Università di Roma, Italy; Grant # RM1181642B2FDE85, 2018.
  - "Mechanics of soft fibered active materials", Sapienza, Università di Roma, Italy; Grant # AI2617PT9LE, 2017.
  - "Mechanics of the atrio-ventricular coupling in physiological conditions and in presence of diastolic disfunction", Sapienza, Università di Roma, Italy; Grant # RM116154C8A44723, 2016
  - "Reconstruction of human ventricular mechanics in parallel by integrating left and right pumps and morphometrics", Inter-University Grants, Sapienza, Università di Roma, Italy; Grant # C26A13NTJY, 2013.
  - "Left ventricular motion in clinical studies and theoretical modeling: assessment of new indicators of cardiac function", Inter-University Grants, Sapienza, Università di Roma, Italy; Sapienza Grant # C26A12F4A2, 2012.
  - "Torsion and contraction in the human left ventricle: physics modelling VS pathology and clinics", Inter-University Grants, Sapienza, Università di Roma, Italy; Grant # C26A11STT5, 2011.
  - "Multiscale Mathematical Modelling in Materials Physics: from Molecular Dynamics to Muscle Models", High Performance Computing grant sponsored by CASPUR, 2009, 2010.
  - "Modellazione fisico-matematica di materiali e strutture intelligenti (Smart Material Modeling)", Young Researchers Grant sponsored by INdAM-GNFM (National Institute for Mathematics-National Group on Mathematical Physics), 2009.
  - "Modelli Multicampo per materiali con microstruttura ferromagneti e cristalli liquidi nematici (Multifield Modeling of Microstructured Ferromagnets and Nematic Gels)", Young Researchers Grant sponsored by INdAM-GNFM (National Institute for Mathematics-National Group on Mathematical Physics), 2007.
  - "Modelli Matematici per la Scienza dei Materiali (Mathematical Models for Materials Science)", research grant sponsored by Italian Minister of University and Research, 2005.
  - "Crescita e Riorganizzazione Materiale (Growth and Material Reorganization)", research project sponsored by GNFM (National Group on Mathemtical Physics), 2002.
  - "Continui di Grado Elevato e Teoria delle Distribuzioni (High Order Continua and Theory of Distributions)", research project sponsored by GNFM (National Group on Mathematical Physics), 2001.

Outreach

Various activities aimed at promoting STEM education in the community and at schools.

- *Math to Touch: exploring mathematics and algebraic surfaces*, Notte Europea dei Ricercatori (European Research Night: Be a citizen Scientist), University Roma Tre, Italy, September 29, 2019.
- *The Physics of Flight: from fruit fly to Airbus*, Occhi su Marte (Eyes on MArs), Dept. Mathematics and Physics, University Roma Tre, Italy, February 15, 2019.
- *Surf on Surface: exploring algebraic surfaces*, Notte Europea dei Ricercatori (European Research Night: Be a citizen Scientist), University Roma Tre, Italy, September 28, 2018.
- *Obey the Geometry: from Eratostene to Disney*, Professione Ricercatore (Researcher as a Profession), Dept. Mathematics and Physics, University Roma Tre, Italy, June 19, 2018.
- *The Physics of Flight: from fruit fly to Airbus*, Occhi su Giove (Eyes on Jupiter), Dept. Mathematics and Physics, University Roma Tre, Italy, June 8, 2018.
- *A Master Degree in Computational Sciences*, Giornata di Vita Universitaria (A day as a grad student), Dept. Mathematics and Physics, University Roma Tre, Italy, February 20, 2018.
- *A Master Degree in Computational Sciences*, Salone dello Studente (The Student Fair), FIERA di ROMA, Rome, Italy, November 8-10, 2017.
- *The Geometry of Shapes: from Biology to Animated Cartoon*, Notte Europea dei Ricercatori (European Research Night: Be a citizen Scientist), University Roma Tre, Italy, September 29, 2017.
- *Differential Geometry and the Motion of the Heart*, A Tea with Mathematics, Dept. Mathematics and Physics, University Roma Tre, Italy, March 15, 2017.
- *The Geometry of Shapes: from Biology to Animated Cartoon*, Notte Europea dei Ricercatori (European Research Night: Be a citizen Scientist), University Roma Tre, Italy, September 30, 2016.
- *The Beating Heart*, Notte Europea dei Ricercatori (European Research Night: Be a citizen Scientist), University Roma Tre, Italy, September 25, 2015.

Teaching

Various teaching activities at:

- School of Mathematics, Università Roma Tre, Italy:
  - The Finite Elements Method (2017 $\sim$ present);
- School of Engineering, Università Roma Tre, Italy:
  - Theory of Structures (2012 $\sim$ present);

  - Dynamics of Structures (1999 $\sim$ 2002 & 2012 $\sim$ 2016);
  - Structural Mechanics (2007 $\sim$ 2012).
  - Introduction to Continuum Mechanics (2005 $\sim$ 2008);
  - Elements of Mechanics of Materials (2002 $\sim$ 2003);
  - Elements of Mechanics of Vibrations (2001 $\sim$ 2002);

- School of Aerospace Engineering, Sapienza, Università di Roma, Italy:

  - Structural Mechanics (2007 $\sim$ 2008).

- School of Architecture, Università Roma Tre, Italy:

  - Elements of Structural Mechanics (2004 $\sim$ 2005);

Short Advanced Courses

- Intensive course "Introduction to Solvers in COMSOL Multiphysics", organized by COMSOL Italia, October 26, 2017, Brescia, Italy.

- "Continuum Modeling of Nematic Liquid Crystals", CECAM SCHOOL Liquid Crystal Modelling and Simulation: A Comprehensive Introduction Ettore Majorana Foundation and Centre for Scientific Culture Erice, July 14-18, 2017, Italy.

- "Gel Dynamics: a Continuum Mechanics Perspective", IEEE Summer School on Multiscale Bioengineering: from Molecules to organs (μMBioEng), University of Perugia, June 6-10, 2016, Perugia, Italy.

- Tutorial on "Active Soft Matter", at the Workshop 'Mechanics in Biology', GSSI (Gran Sasso Science Institute), May 6-9, 2014, L'Aquila, Italy.

- Lectures on "Mechano-biology" at the XXXVII Summer School on Mathematical Physics, organised by INdAM-GNFM (Istituto Nazionale di Alta Matematica - Gruppo Nazionale di Fisica Matematica), September 17-29, 2012, Ravello, Italy.

- Intensive course "Managing Solvers in COMSOL Multiphysics", organised by COMSOL Italia, March 18-20, 2013, Brescia, Italy.

- Intensive course "Introduction to FEM with COMSOL Multiphysics", organised by COMSOL Italia, February 6-8, 2012, Brescia, Italy.

- Course "Mathematical Models in Cardiac Physiology", organised by Dip. di Matematica e Fisica "Niccolò Tartaglia", Università Cattolica del Sacro Cuore, February 2011, Brescia, Italy.

- Intensive course "Introduction to FEM for Multiphysics Problems", organised by CASPUR (Consorzio interuniversitario per le Applicazioni di Supercalcolo per Università e Ricerca), June 2011, Roma, Italy.

- Intensive course "Introduction to FEM for Multiphysics Problems", organizzato dal CASPUR (Consorzio interuniversitario per le Applicazioni di Supercalcolo per Università e Ricerca), December 1-3, 2009, Roma, Italy.

- Intensive course "Introduction to the Finite Element Method", organised by Laboratorio Computazionale at Dip. di Scienze dell'Ingegneria Civile, Università Roma Tre, May 2003, Roma, Italy.

- Course "Scientific Computing and Programming in Matlab", organised by IAC-CNR (Istituto di Applicazioni per il Calcolo, Consiglio Nazionale delle Ricerche), June 2002, Roma, Italy.

- Course "Introduction to Matlab", organised by Computational Lab at Dip. di Scienze dell'Ingegneria Civile, Università Roma Tre, May 2001, Roma, Italy.

Selection of Invited Talks

- *Stress-free Morphing of Elastic Bodies*
  University of Pisa, Challenges in Mechanics, a series of seminars between Pisa and Roma, April 4th, 2019, Pisa, Italy.

- *On the Functional Architecture of the Myocardium*
  Accademia dei Lincei & CNR. Workshop Mathematics for BioMedicine, October 8-11, 2018, Rome, Italy.

- *Morphing of fibered cylinders under controlled stress state*; Workshop Geometry of Soft Matter, Instituto Internacional de Fisica, May 21, 2018, Natal, Brazil.

- *Mathematical Modeling of Bio-hybrid and Bio-inspired Soft Robots.*
  Assemblea Scientifica GNFM, May 5, 2017, Montecatini Terme, Italy

- *Geometric Morphometrics for Motion Analysis of Biological Soft Tissues.*
  IHES, Institut des Hautes Études Scientifiques, March 2015, Bures Sur Yvette, France.

- *Twist-nematic Elastomers.*
  Organizers: Complex Fluid Group, Princeton University, July 18, 2012, Princeton, USA.

- *Distortion-Induced Shape-Formation in Nematic Elastomers.*
  Workshop on Mechanics of soft materials and tissues: modeling, simulation and experiments, Organizers: SISSA MathLab, May 7-9, 2012, Trieste, Italy.

- *On the Active Response of Soft Living Tissues.* Mini-Workshop: The Mathematics of Electro-Active Smart Materials; Mathematisches Forschungsinstitut Oberwolfach, February 24 - March 1, 2008, Oberwolfach, Germany.

- *Electro-Mechanical Modeling of Excitable Soft Tissues.*
  Keynote lecture at the European COMSOL Multiphysics Conference, October 2007, Grenoble, France.

Postgraduate Studies and Schools

- Summer School on Mathematical Physics, organized by Italian Research Group in Mathematical Physics (GNFM), Ravello, Italy, in the years 2018, 2012, 2006, 2005, 2004, 1999, 1997, 1993.

- Workshop on Driven States in Soft and Biological Matter, at the Abdus Salam International Centre for Theoretical Physics, Trieste, Italy, 2006.

- Spring College on Science at the Nanoscale, at the Abdus Salam International Centre for Theoretical Physics, Trieste, Italy, 2004.

- XVIIth International Winterschool on Electronic Properties on Novel Materials (Euroconference on Molecular Nanostructures), at Kirchberg, Tirol, Austria, 2003.

- 11th International Workshop on Computational Physics and Material Science: Total Energy and Force Methods, at the Abdus Salam International Centre for Theoretical Physics, Trieste, Italy, 2003.

- Simulation of Fluid and Structure Interaction, Summer School of European Mathematical Society, Prague, Czech Republic 2001.

- School on Geometric Measure Theory and Wavelets, at the International Centre For Mathematical Sciences, Heriot-Watt University, Edinburgh, UK 1993.

Publications and Work in Progress

Articles on book

1. P. Piras, **L. Teresi**, S. Gabriele, A. Evangelista, G. Esposito, V. Varano, C. Torromeo, P. Nardinocchi, and P. E. Puddu.
   Systo-Diastolic LV Shape Analysis by Geometric Morphometrics and Parallel Transport Highly Discriminates Myocardial Infarction.
   Statistical Atlases and Computational Models of the Heart. Imaging and Modelling Challenges, Camara, O., Mansi, T., Pop, M., Rhode, K., Sermesant, M., Young, A. (eds.)
   Series: Image Processing, Computer Vision, Pattern Recognition, and Graphics, Vol. 9534, Springer (2016).
   doi 10.1007/978-3-319-28712-6 13

2. A. Evangelista, S. Gabriele, P. Nardinocchi, P. Piras, P.E. Puddu, **L. Teresi**, C. Torromeo and V. Varano.
   Continuum Mechanics Meets Echocardiographic Imaging: Investigation on the Principal Strain Lines in Human Left Ventricle.
   Developments in Medical Image Processing and Computational Vision, J. M. R. S. Tavares, R. Natal Jorge (eds.)
   Lecture Notes in Computational Vision and Biomechanics 19, Springer (2015).
   doi 10.1007/978-3-319-13407-9-3

3. C. Cherubini, S. Filippi, P. Nardinocchi, **L. Teresi**.
   An Electromechanical model of cardiac tissues.
   Invited paper for Mechanosensitivity of the Heart, Series: *Mechanosensitivity in Cells and Tissues*, Vol. 3. Eds. A. Kamkin & I. Kiseleva, Springer, Dordrecht (2010),
   ISBN: 978-90-481-2849-5. doi: dx.doi.org/10.1007/978-90-481-2850-1

4. P. Nardinocchi, T.Svaton, **L. Teresi**.
   Mechanical response of Helically Wound Fiber-Reinforced Incompressible Non-linearly Elastic Pipes.
   Invited paper for Mechanics of Microstructured Solids, *Lecture Notes in Applied and Computational Mechanics*, Vol.46, pp. 109–117. Eds. J.-F. Ganghoffer, F. Pastrone, Springer-Verlag, Berlin, Heidelberg (2009),
   ISBN 978-3-642-00910-5; doi: 10.1007/978-3-642-00911-2

5. G. Grassi, M. Grassi, G. Pontrelli, **L. Teresi**.
   Modelling drug release in cardiovascular eluting stents.
   Modelling Cardiovascular System and Mechanical Circulatory Support, CNR. Ed. C. De Lazzari, Roma, Italy (2007),
   ISBN 8880800817.

6. **L. Teresi**, E. Vacca.
   Transmission Phenomena Across Highly Conductive Interfaces.
   Applied and Industrial Mathematics in Italy II, *Series on Advances in Mathematics for Applied*

Sciences, vol. 75. Eds. V. Cutello, G. Fotia, L. Puccio, World Scientific (2007), ISSN 1793-0901.

7. A. DiCarlo, P. Nardinocchi, M. Tringelova, **L. Teresi**.
   The Cardiovascular System as a Smart System.
   Topics on Mathematics for Smart Systems, pp. 253-270. Eds. B. Miara (ESIEE, Paris, France), G. Stavroulakis (Technical University of Crete, Greece) & V. Valente (IAC-CNR, Rome, Italy), World Scientific (2007),
   ISBN 9812703926; doi: 10.1142/9789812706874_0018

Pre-print

- **L. Teresi**.
  Gel dynamics: a continuum mechanics perspective,
  Classroom Notes of the IEEE Summer School on Multiscale Bioengineering: from Molecules to organs (μMBioEng), University of Perugia, June 6-10, 2016, Perugia, Italy.

Articles

1. **L. Teresi**, F. Milicchio, S. Gabriele, P. Piras, V. Varano.
   Shape deformation from metrics transport.
   Int. Journal of Non-Linear Mechanics 119 (2020) 103326
   https://doi.org/10.1016/j.ijnonlinmec.2019.103326

2. M. Curatolo, P. Nardinocchi, **L. Teresi**, D. P. Holmes.
   Swelling effects on localized adhesion of an elastic ribbon.
   Proceedings Royal Society A, vol. 475 (2019).
   http://dx.doi.org/10.1098/rspa.2019.0067

3. R. De Vita, P. Nardinocchi, **L. Teresi**.
   Diffusion-driven stress relaxation of gels under incremental planar extensions.
   Mechanics of Materials, vol. 134, pp. 106-114 (2019).
   https://doi.org/10.1016/j.mechmat.2019.04.016

4. I. Colorado Cervantes, V. Sansalone, **L. Teresi**.
   The Heart Function as a Motor-Brake System.
   Journal of Theoretical Biology, vol. 467, pp. 23-30 (2019).
   https://doi.org/10.1016/j.jtbi.2019.01.034

5. V. Varano, P. Piras, S. Gabriele, **L. Teresi**, P. Nardinocchi, I.L. Dryden, C. Torromeo, M. Schiariti, P.E. Puddu.
   Local and Global Energies for Shape Analysis in Medical Imaging.
   Int. J. Numerical Methods in Biomedical Engineering (2019).
   https://doi.org/10.1002/cnm.3252

6. P.Piras, C. Torromeo, A. Evangelista, G. Esposito, P. Nardinocchi, **L. Teresi**, A. Madeo, F. Re, C. Chialastri, M. Schiariti, V. Varano, P.E. Puddu.

Non-invasive prediction of genotype positivephenotype negative in hypertrophic cardiomyopathy by 3D modern shape analysis.
Experimental Physiology, 104:16881700 (2019). https://doi.org/10.1113/EP087551

7. S. Abdelmohsen, S. Adriaenssens, R. El-Dabaa, S. Gabriele, L. Olivieri, **L. Teresi**.
A multi-physics approach for modeling hygroscopic behavior in wood low-tech architectural adaptive systems.
Computer-Aided Design, (2018).
https://doi.org/10.1016/j.cad.2018.07.005

8. F. Milicchio, V. Varano, S. Gabriele, **L. Teresi**, P. E. Puddu, P. Piras.
Parallel transport of local strains.
Computer Methods in Biomechanics and Biomedical Eng.: Imaging & Visualization, (2018).
doi: 10.1080/21681163.2018.1479313 (https://doi.org/10.1080/21681163.2018.1479313)

9. A. Suinesiaputra, P. Ablin, X. Albà, M. Alessandrini, J. Allen, W. Bai, S. Çimen, P. Claes, B. R. Cowan, J. D'hooge, N. Duchateau, J. Ehrhardt, A. F. Frangi, A. Gooya, V. Grau, K. Lekadir , A. Lu, A. Mukhopadhyay, I. Oksuz, N. Parajuli, X. Pennec, M. Pereañez, C. Pinto, P. Piras, M. Rohé, D. Rueckert, D. Säring, M. Sermesant, K. Siddiqi, M. Tabassian, **L. Teresi**, S. A. Tsaftaris, M. Wilms, A. A. Young, X. Zhang, P. Medrano-Gracia.
Statistical Shape Modeling of the Left Ventricle: Myocardial Infarct Classification Challenge.
IEEE Journal of Biomedical and Health Informatics, 22:2, (2018).
doi: 10.1109/JBHI.2017.2652449

10. V. Varano, P. Piras, S. Gabriele, **L. Teresi**, P. Nardinocchi, I. L. Dryden, C. Torromeo, P. E. Puddu.
The decomposition of deformation: New metrics to enhance shape analysis in medical imaging.
Medical Image Analysis, 46: 35–56 (2018).
https://doi.org/10.1016/j.media.2018.02.005

11. M. Curatolo, P. Nardinocchi, **L. Teresi**.
Driving water cavitation in a hydrogel cavity.
Soft Matter, 14: 2310–2321 (2018).
doi: 10.1039/c8sm00100f

12. M. Curatolo, P. Nardinocchi, E. Puntel, **L. Teresi**.
Transient instabilities in the swelling dynamics of a hydrogel sphere.
Journal Applied Physics, vol. 122, pp. 145109 (2017).
doi: 10.1063/1.5007229 (http://dx.doi.org/10.1063/1.5007229)

13. V. Varano, S. Gabriele, **L. Teresi**, I.L. Dryden, P.E. Puddu, C. Torromeo, P. Piras.
The TPS Direct Transport: A New Method for Transporting Deformations in the Size-and-Shape Space.
International Journal of Computer Vision, vol. 124(3), pp. 384-408 (2017).
ISSN 0920-5691; doi: 10.1007/s11263-017-1031-9

14. P. Piras, C. Torromeo, A. Evangelista, S. Gabriele, G. Esposito, P. Nardinocchi, **L. Teresi**, A. Madeo, M. Schiariti, V. Varano, P.E. Puddu.

Homeostatic Left Heart integration and disintegration links atrio-ventricular covariation's dyshomeostasis in Hypertrophic Cardiomyopathy.
SCIENTIFIC REPORTS, vol. 7, pp. 6257 (2017).
doi: 10.1038/s41598-017-06189-w

15. R. De Vita, R. Grange, P. Nardinocchi, **L. Teresi**.
Mathematical model for isometric and isotonic muscle contractions.
Journal of Theoretical Biology, vol. 425, pp. 1-10 (2017).
http://dx.doi.org/10.1016/j.jtbi.2017.05.007

16. M. Curatolo, S. Gabriele, **L. Teresi**.
Swelling and Growth: a Constitutive Framework for Active Solids.
Meccanica, vol. 52, pp. 3443-3456 (2017).
doi: 10.1007/s11012-017-0629-x

17. M. Minozzi, P. Nardinocchi, **L. Teresi**, V. Varano.
Growth-induced Compatible Strains.
Mathematics and Mechanics of Solids, vol. 22(1), pp. 62 (2017).
doi: 10.1177/1081286515570510

18. P.Piras, **L. Teresi**, P.E. Puddu, C. Torromeo, A.A. Young, A. Suinesiaputra, P. Medrano-Gracia.
Morphologically normalized left ventricular motion indicators from MRI feature tracking characterize myocardial infarction.
SCIENTIFIC REPORTS, vol. 7, pp. 12259 (2017).
doi: 10.1038/s41598-017-12539-5

19. A. Bouton, Y. Simon, F. Goussard, **L. Teresi**, V. Sansalone.
New finite element study protocol: Clinical simulation of orthodontic tooth movement.
International Orthodontics, vol. 15(2), pp. 165-179 (2017).
doi: 10.1016/j.ortho.2017.03.001

20. F. Claraca, F. Goussard, **L. Teresi**, Vde. Buffrénil, V. Sansalone.
Do the ornamented osteoderms influence the heat conduction through the skin?
A finite element analysis in Crocodylomorpha.
Journal of Thermal Biology, vol. 69, pp. 39–53 (2017).
http://dx.doi.org/10.1016/j.jtherbio.2017.06.003

21. P. Nardinocchi, **L. Teresi**.
Actuation performances of anisotropic gels.
Journal Applied Physics, 120, pp. 215107 (2016).
doi: 10.1063/1.4969046

22. M. Curatolo, **L. Teresi**.
Modeling and simulation of fish swimming with active muscles.
Journal of Theoretical Biology, vol. 409 (2016).
doi: 10.1016/j.jtbi.2016.08.025

23. P. Piras, C. Torromeo, F. Re, A. Evangelista, S. Gabriele, G. Esposito, P. Nardinocchi, **L. Teresi**, A. Madeo, C. Chialastri, M. Schiariti, V. Varano, M. Uguccioni, P. E. Puddu.
Left Atrial trajectory impairment in Hypertrophic Cardiomyopathy disclosed by Geometric Morphometrics and Parallel Transport.
SCIENTIFIC REPORTS, vol. 6, pp. 34906 (2016).
doi: 10.1038/srep34906

24. A. Lucantonio, **L. Teresi**, A. De Simone.
Continuum theory of swelling material surfaces with applications to thermo-responsive gel membranes and surface mass transport.
Journal of the Mechanics and Physics of Solids, vol. 89, pp. 96 (2016).
doi: 10.1016/j.jmps.2016.02.001

25. P. Piras, **L. Teresi**, L. Traversetti, V. Varano, S. Gabriele, T. Kotsakis, P. Raia, P. E. Puddu, and M. Scalici.
The conceptual framework of ontogenetic trajectories: parallel transport allows the recognition and visualization of pure deformation patterns.
Evolution & Devolopment, vol. 18(3), pp. 182-200 (2016).
doi: 10.1111/ede.12186

26. G. Salerno, **L. Teresi**, C. Tonelli, V. Vitale.
Numerical modelling of structural cooling in Mediterranean climate. *Int. J. of Ventilation,* 15:2016 (3-4), (2016).
doi: 10.1080/14733315.2016.1221571

27. M.R. Webster, J.J. Socha, **L. Teresi**, P. Nardinocchi, R. De Vita.
Structure of tracheae and the functional implications for collapse in the American cockroach.
Bioinspiration & Biomimetics, vol. 10, pp. 066011 (2015).
doi: 10.1088/1748-3190/10/6/066011

28. V. Varano, S. Gabriele, **L. Teresi**, I. Dryden, P.E. Puddu, C. Torromeo, P. Piras.
Comparing Trajectories on the Size and Shape Space.
arXiv: Statistics - Methodology (2015).
http://arxiv.org/pdf/1510.00708v1.pdf

29. L. Maiorino, A.A. Farke, T. Kotsakis, **L. Teresi**, P. Piras.
Variation in the shape and mechanical performance of the lower jaws in ceratopsid dinosaurs.
Journal of Anatomy, (2015).
doi: 10.1111/joa.12374

30. P. Nardinocchi, M. Pezzulla, **L. Teresi**.
Anisotropic Swelling of Thin Gel Sheets.
Soft Matter, n.11, 1492 (2015).
doi: 10.1039/c4sm02485k

31. P. Nardinocchi, M. Pezzulla, **L. Teresi**.
Steady and transient analysis of anisotropic swelling in fibered gels.

Journal of Applied Physics, 118, 244904 (2015).
doi: 10.1063/1.4938737

32. A. Madeo, P. Piras, F. Re, S. Gabriele, P. Nardinocchi, **L. Teresi**, C. Torromeo, C. Chialastri, M. Schiariti, G. Giura, A. Evangelista, T. Dominici, V. Varano, E. Zachara, P. E. Puddu.
A new 4D trajectory-based approach unveils abnormal LV revolution dynamics in hypertrophic cardiomyopathy.
PLOS ONE, (2015).
doi: 10.1371/journal.pone.0122376

33. N. Lanconelli, S. Masetti, P. Nardinocchi, **L. Teresi**, P.E. Puddu, C. Torromeo, V. Giglio.
Strain Analysis of Cardiac Tissues from 3D Ultrasound Images Using Snakes and Speckle Tracking.
Journal of Mechanics in Medicine and Biology, Vol.15, No. 2 (2015).
doi: 10.1142/S0219519415400126

34. A. Evangelista, S. Gabriele, P. Nardinocchi, P. Piras, P.E. Puddu, **L. Teresi**, C. Torromeo, V. Varano.
Non-invasive assessment of functional strain lines in the real human left ventricle via speckle tracking echocardiography.
Journal of Biomechanics, 48, pp. 465–471 (2015).
doi: 10.1016/j.jbiomech.2014.12.028

35. P. Raia, F. Passaro, F. Carotenuto, L. Maiorino, P. Piras, **L. Teresi**, S. Meiri, Y. Itescu, M. Novosolov, M.A. Baiano, R. Martínez, M. Fortelius.
Cope's Rule and the Universal Scaling Law of Ornament Complexity.
The American Naturalist, 186, n.2 (2015).
doi: 10.1086/682011

36. P. Piras, G. Sansalone, **L. Teresi**, M. Moscato, A. Profico, R. Eng, T.C. Cox, A. Loy, P. Colangelo, T. Kotsakis.
Digging Adaptation in Insectivorous Subterranean Eutherians. The Enigma of Mesoscalops montanensis Unveiled by Geometric Morphometrics and Finite Element Analysis.
Journal of Morphology, (2015).
doi: 10.1002/jmor.20405

37. P. Piras, A.D. Buscalioni, **L. Teresi**, P. Raia, G. Sansalone, T. Kotsakis, J. Cubo.
Morphological integration and functional modularity in the crocodilian skull.
Integrative Zoology, 9, pp. 498-516 (2014).
doi: 10.1111/1749-4877.12062

38. A. Evangelista, S. Gabriele, P. Nardinocchi, P. Piras, P.E. Puddu, **L. Teresi**, C. Torromeo, V. Varano.
A comparative analysis of the strain-line pattern in the human left ventricle: experiments vs modeling.
Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization, (2014).
doi: 10.1080/21681163.2014.927741

39. A. Lucantonio, P. Nardinocchi, M. Pezzulla, **L. Teresi**.
Multiphysics of biohybrid systems: shape control and electro-induced motion.
Smart Materials and Structures, 23, pp. 045043 (2014).
doi: 10.1088/0964-1726/23/4/045043

40. P. Piras, A. Evangelista, S. Gabriele, P. Nardinocchi, **L. Teresi**, C. Torromeo, V. Varano, P.E. Puddu.
4D-analysis of left ventricular cycle in healthy subjects using Procrustes Motion Analysis.
PLOS ONE, 9/1 pp. e86896 (2014).
doi: 10.1371/journal.pone.0086896

41. P. Piras, L Maiorino, **L. Teresi**, C. Meloro, P. Raia, F. Lucci, T. Kotsakis.
Bite of the Cats: Relationships between Functional Integration and Mechanical Performance as Revealed by Mandible Geometry.
Systematic Biology, 62(6), pp. 878-900, (2013).
doi: 10.1093/sysbio/syt053

42. P. Nardinocchi, **L. Teresi**, V. Varano.
The elastic metric: a review of elasticity with large distortions.
Invited paper for the Special Issue 'Soft Matter: a Nonlinear Continuum Mechanics Perspecive', *International Journal of Non linear Mechanics*, 56, pp. 3442 (2013).
doi: dx.doi.org/10.1016/j.ijnonlinmec.2013.05.002

43. **L. Teresi**, V. Varano.
Modeling Helicoid to Spiral-Ribbon Transitions of Twist-Nematic Elastomers.
Soft Matter, 9, pp. 3081–3088 (2013).
doi: dx.doi.org/10.1039/C3SM27491H

44. A. Lucantonio, P. Nardinocchi, **L. Teresi**.
Transient analysis of swelling–induced large deformations in polymer gels.
Journal of the Mechanics and Physics of Solids, 61, n. 1, pp. 205–218 (2013).
doi: dx.doi.org/10.1016/j.jmps.2012.07.010

45. P. Nardinocchi, P.E. Puddu, **L. Teresi**, V. Varano.
Advantages in the Torsional Performances of a Simplified Cylindrical Geometry due to Transmural Differential Contractile Properties.
European Journal of Mechanics A/Solids, 36, pp. 173–179 (2012).
doi: dx.doi.org/10.1016/j.euromechsol.2012.03.001.

46. P. Nardinocchi, **L. Teresi**, V. Varano.
Strain Induced Shape Formation in Cylindrical Tubes.
Journal of the Mechanics and Physics of Solids, 60, n. 8, pp. 1420–1431(2012).
doi: dx.doi.org/10.1016/j.jmps.2012.04.010.

47. P. Piras, G. Sansalone, T. Kotsakis, P. Colangelo, A. Loy, **L. Teresi**.
Testing convergent and parallel adaptations of talpids humerus mechanical performance by means of Geometric Morphometrics and Finite Element Analysis.

Journal of Morphology, 273, pp. 696–711 (2012).
doi: dx.doi.org/10.1002/jmor.20015.

48. P. Nardinocchi, **L. Teresi**, V. Varano.
A Simplified Mechanical Modeling for Myocardial Contraction
and the Ventricular Pressure–Volume Relationships.
Mechanics Research Communications, 38, pp. 532535 (2011),
ISSN: 0093-6413; doi: dx.doi.org/10.1016/j.mechrescom.2011.07.002

49. A. Evangelista, P. Nardinocchi, P.E. Puddu, C. Torromeo, **L. Teresi**, V. Varano.
Torsion of the human left ventricle: experimental analysis and computational modelling.
Progress in Biophysics & Molecular Biology, 107 (1), pp. 112-121 (2011),
ISSN: 0079-6107,
doi: dx.doi.org/10.1016/j.pbiomolbio.2011.07.008

50. P. Nardinocchi, **L. Teresi**, V. Varano.
Myocardial Contractions and the Ventricular Pressure–Volume Relationship,
arXiv, Tissues and Organs (q-bio.TO), [Tissues and Organs (q-bio.TO)] (2010),
http://arxiv.org/pdf/1005.5292v1

51. Y. Sawa, K. Urayama, T. Takigawa, A. DeSimone, **L. Teresi**.
Thermally Driven Giant Bending of Liquid Crystal Elastomer Films with Hybrid Alignment.
Macromolecules, 43, pp. 4362-4369 (2010),
doi: dx.doi.org/10.1021/ma1003979

52. P. Nardinocchi, T. Svaton, **L. Teresi**.
Torsional deformations in incompressible fibre–reinforced cylindrical pipes.
Eur. J. Mechanics A/Solids, 29, pp. 266-273 (2010),
doi: dx.doi.org/10.1016/j.euromechsol.2009.09.001

53. A. De Simone, **L. Teresi**.
Elastic Energies for Nematic Elastomers.
European Physical Journal E, Soft Matter, 29, n. 2 pp.191 (2009),
doi: dx.doi.org/10.1140/epje/i2009-10467-9

54. P. Piras, A. Delgado-Buscalioni, J. Cubo, **L. Teresi**.
The Shadow of Forgotten Ancestors Differently Constrains the Fate of Alligatoroidea and Crocodyloidea Face to Global Change.
Journal of Biogeography, 18, pp. 30-40 (2009),
doi: dx.doi.org/10.1111/j.1466-8238.2008.00426.x

55. L. Comel, A. Ferluga, L. Galasso, G. Grassi, M. Grassi, G. Pontrelli, **L. Teresi**.
Novel Design of Drug Delivery in Stented Arteries: a Numerical Comparative Study.
Mathematical Biosciences and Engineering, 6 n.3, pp. 493-508 (2009),
doi: dx.doi.org/10.3934/mbe.2009.6.493

56. A. Fukunaga, K. Urayama, T. Takigawa, A. DeSimone, **L. Teresi**.
Dynamics of Electro-Opto-Mechanical Effects in Swollen Nematic Elastomers.

Macromolecules, 41 (23), pp. 9389-9396 (2008),
doi: dx.doi.org/10.1021/ma801639j

57. C. Cherubini, S. Filippi, P. Nardinocchi, **L. Teresi**.
An Electromechanical Model of Cardiac Tissue:
Constitutive Issues and Electrophysiological Effects.
Progress in Biophysics & Molecular Biology, 97, pp. 562-573, (2008),
doi: dx.doi.org/10.1016/j.pbiomolbio.2008.02.001

58. A. DeSimone, A. DiCarlo, **L. Teresi**.
Critical voltages and blocking stresses in nematic gels.
European Physical Journal E, Soft Matter, 24/3, pp. 303-310 (2007),
doi: dx.doi.org/10.1140/epje/i2007-10240-2

59. A. Di Carlo, P. Podio-Guidugli, **L. Teresi**.
On a mathematical model of twisted multiwall carbon nanotubes.
Comm. SIMAI Congress, 2 (2007),
ISSN 1827-9015, doi: 10.1685/CSC06166

60. P. Nardinocchi, **L. Teresi**.
On the Active Response of Soft Living Tissues.
J. Elasticity, 88, pp. 2739 (2007),
doi: dx.doi.org/10.1007/s10659-007-9111-7

61. P. Nardinocchi, G. Pontrelli, **L. Teresi**.
A one-dimensional Model for Blood Flow in Prestressed Vessels.
European Journal of Mechanics A/Solids, 24/1, pp. 23-33 (2005),
doi: dx.doi.org/10.1016/j.euromechsol.2004.10.002

62. P. Nardinocchi, **L. Teresi**.
The Influence on Initial Stresses on Blood Vessel Mechanics.
J. Mech. in Medicine and Biology, 3, n.2, pp. 215-229 (2003),
doi: dx.doi.org/10.1142/S0219519403000739

63. P. Nardinocchi, A. Tiero, **L. Teresi**.
Constitutive Identification of Affine Rods.
Mechanics Research Communications, 30, issue 1, pp.61-68 (2003),
doi: dx.doi.org/10.1016/S0093-6413(02)00256-2

64. P. Nardinocchi, A. Tiero, **L. Teresi**.
A Direct Theory of Affine Rods.
European Journal of Mechanics A/Solids, 21, n.6, pp. 653-667 (2002),
doi: dx.doi.org/10.1016/S0997-7538(02)01226-3

65. A. De Simone, J.J. Marigo, **L. Teresi**.
A Damage Mechanics Approach to Stress Softening and its Application to Rubber.
European Journal of Mechanics A/Solids, 20, n. 6, pp. 873-892 (2001),
doi: dx.doi.org/10.1016/S0997-7538(01)01171-8

66. P. Nardinocchi, A. Tiero, **L. Teresi**.
A Direct Theory of Affine Bodies.
International Journal of Engineering Science, 38, n.8, pp. 865-878 (2000),
doi: dx.doi.org/10.1016/S0020-7225(99)00069-5

67. A. Tiero, **L. Teresi**.
Lie Groups and the Compatibility Conditions for Continua with Rigid Structure.
International Journal of Engineering Science, 35, n.12/13, pp. 1195-1202 (1997),
doi: dx.doi.org/10.1016/S0020-7225(97)00105-5

68. A. Tiero, **L. Teresi**.
On Variational Approaches to Plate Models.
Meccanica, 32, pp. 143-156 (1997),
doi: dx.doi.org/10.1023/A:1004271405217

Ph.D. Thesis

- On the Derivation of Non Linear Thin-shells Theories From 3D Elasticity Using Variational Methods, Ph.D. Thesis in Theoretical and Applied Mechanics (1996).

Proceedings

1. J. I. Colorado-Cervantes, V. Varano, **L. Teresi**, V. Sansalone.
   Muscle Contraction and Pressure-Volume Loops in the Left-Heart.
   Proc.of the International French Society of Biomechanics 2017 Conference, *Computer Methods in Biomechanics and Biomedical Engineering*, vol. 20, no. s1, s43-s44 (2017).
   https://doi.org/10.1080/10255842.2017.1382852

2. J. I. Colorado-Cervantes, V. Sansalone, **L. Teresi**, V. Varano.
   Left-Heart Pressure-Volume Relationships.
   AIMETA 2017 - Proc. XXIII Conference of Italian Association of Theoretical and Applied Mechanics, Salerno, Italy, September 2017. L. Ascione, V. Berardi, L. Feo, F. Fraternali and A. M. Tralli (eds.), Gechi Edizioni. ISBN: 978-889-42484-7-0

3. M. Curatolo, **L. Teresi**. The Virtual aquarium: simulation of fish swimming, Proc. European COMSOL Conference, Grenoble, France (2015).

4. A. Evangelista, S. Gabriele, P. Nardinocchi, P. Piras, P.E. Puddu, **L. Teresi**, C. Torromeo, V. Varano, Computational tools for measuring heart strains, Proc. ICCB 2015, VI International Conference on Computational Bioengineering, Barcelona, Spain (2015).

5. V. Varano, S. Gabriele, **L. Teresi**, I. Dryden, P.E. Puddu, C. Torromeo, P. Piras, Comparing Shape Trajectories of Biological Soft Tissues in the Size-and-shape Space, Proc. of BIOMAT2014, International Symposium on Mathematical and Computational Biology, Stefan Banach International Mathematical Center - Institute of Mathematics, Bedlewo, Poland (2014). DOI: 10.1142/9789814667944_0023

6. S. Gabriele, P. Nardinocchi, **L. Teresi**, V. Varano, Evolution of the principal strain lines along characteristic remodelling processes of the human left ventricle. Proc. 11th World Congress on Computational Mechanics (WCCM XI), Barcelona, Spain (2014).

7. P. Nardinocchi, M. Pezzulla, **L. Teresi**, Mechanics of biohybrid systems. Proc. IUTAM Symposium on Mechanics of Soft Active Materials, Haifa, Israel (2014).

8. S. Gabriele, **L. Teresi**, V. Varano, A. Evangelista, P. Nardinocchi, P. E. Puddu, C. Torromeo, On the strainline patterns in a real human left ventricle. Proc. vipimage 2013 - ECCOMAS Thematic Conferences on Computational Vision and Medical Image Processing. Madeira, Portugal (2013).

9. N. Lanconelli, S. Masetti, P. Nardinocchi, **L. Teresi**, P. E. Puddu, C. Torromeo, V. Giglio. Strain analysis of cardiac tissues from 3D ultrasound images through speckle tracking, ISPA 2013: 8th International Symposium on Image and Signal Processing and Analysis, Trieste, Italy (2013).

10. **L. Teresi**, P. Nardinocchi, V. Pugliese, Modeling anisotropic myocardial contractions, XXXIII International Conference DYNAMICS DAYS EUROPE 2013, Madrid, Spain (2013). ISBN: 978-84-15302-43-8

11. **L. Teresi**, V. Varano. Ribbon Formation in Twist-Nematic Elastomers, Proc. European COMSOL Conference, Milan, Italy (2012). ISBN 978-0-9839688-7-0.

12. A. Lucantonio, P.Nardinocchi, **L. Teresi**. Multiphysics Modeling of Swelling Gels, Proc. European COMSOL Conference, Milan, Italy (2012). ISBN 978-0-9839688-7-0.

13. A. Evangelista, P. Nardinocchi, P. E. Puddu, C. Torromeo, **L. Teresi**, V. Varano. Left Ventricle Motion in Clinical Studies and Theoretical Modeling, Proc. ESB2012: 18th Congress of the European Society of Biomechanics, in Journal of Biomechanics, vol. 45 Supplement 1, pp. S461 (2012).

14. A. DiCarlo, G. Rosi, **L. Teresi**, F. dell'Isola, A. DiCarlo. Coupling between mass density and director arrangement in Nematic Liquid Crystals, Proc. European COMSOL Conference, Stuttgart, Germany, October 2011. ISBN 987-0-9839688-0-1.

15. A. DeSimone, **L. Teresi**. Numerical Experiments for Thermally-induced Bending of Nematic Elastomers with Hybrid Alignment (HNEs), Proc. European COMSOL Conference, Stuttgart, Germany, October 2011. ISBN 987-0-9839688-0-1.

16. P. Nardinocchi, P. E. Puddu, **L. Teresi**, V. Varano. Modeling the Left Ventricular Torsion and Function, SIMAI 2010 (Società Italiana di Matematica Applicata ed Industriale), Cagliari, Italy, June 21-25, 2010.

17. A. DiCarlo, P. Nardinocchi, T. Svatoň, **L. Teresi**. Passive and Active Deformation Processes of 3D Fibre-Reinforced Caricatures of Cardiovascular Tissues, Proc. European COMSOL Conference, Milan, Italy, October 2009. ISBN 987-0-9825697-2-6.

18. P. Nardinocchi, T. Svatoň, **L. Teresi**. Modelling active elastic tissues: the left ventricle contractions, Proc. XIX AIMETA Congress (Italian Association of Theoretical and Applied Mechanics), Ancona, Italy, September 2009. Eds. S. Lenci, ARAS Edizioni, Ancona, Italy. (ISBN: 8896378087, ISBN-13: 9788896378083).

19. A. DeSimone, **L. Teresi**. Electro-mechanical coupling in nematic elastomers: statics and dynamics, Proc. XIX AIMETA Congress (Italian Association of Theoretical and Applied Mechanics), Ancona, Italy, September 2009. Eds. S. Lenci, ARAS Edizioni, Ancona, Italy. (ISBN: 8896378087, ISBN-13: 9788896378083).

20. P. Nardinocchi, **L. Teresi**, V. Varano. A mechanical modeling of cardiac pressure–volume loops, Proc. XIX AIMETA Congress (Italian Association of Theoretical and Applied Mechanics), Ancona, Italy, September 2009. Eds. S. Lenci, ARAS Edizioni, Ancona, Italy. (ISBN: 8896378087, ISBN-13: 9788896378083).

21. A. Desimone, A. DiCarlo, **L. Teresi**. On the dynamics of mesogen remodelling in nematic elastomers: the regime of small elastomer strain and large nematic rotation, Proc. of Cosserat+100, International Conference on the legacy of Théorie des Corps Déformables by Eugène and Francois Cosserat in the centenary of its publication, Paris, France, July 2009.

22. A. DiCarlo, P. Nardinocchi, T. Svatoň, **L. Teresi**. Passive and Active Deformation Processes in Cardiac Tissue, Proc. Int. Conf. on Computational Methods for Coupled Problems in Science and Engineering COUPLED PROBLEMS 2009, Ischia, Italy, June 2009; B. Schrefler, E. Oñate and M. Papadrakakis (Eds), CIMNE, Barcelona, Spain, 2009.

23. C. Cherubini, S. Filippi, P. Nardinocchi, **L. Teresi**. Electromechanical Modeling of Cardiac Tissues, Proc. ESB2008: 16th European Society of Biomechanics Congress, Lucerne, Switzerland, July 2008, on J. of Biomechanics, 41, Supplement 1, p. S506.
doi: dx.doi.org/10.1016/S0021-9290(08)70505-0.

24. P. Nardinocchi, **L. Teresi**. Modeling active contractions in soft living tissues, Mini-Workshop on The Mathematics of Electro-Active Smart Materials, Mathematisches Forschungsinstitut Oberwolfach Report No. 10/2008, February 2008, Oberwolfach, Germany.

25. C. Cherubini, S. Filippi, P. Nardinocchi, **L. Teresi**. Electromechanical modeling of excitable elastic tissues, Proc. XVIII AIMETA Congress (Italian Association of Theoretical and Applied Mechanics), Brescia, Italy, September 2007. Eds. A. Carini, R. Piva, Starrylink, Brescia, Italia. (ISBN: 8889720697, 9788889720691).

26. G. Grassi, M. Grassi, G. Pontrelli, **L. Teresi**. A numerical study of a double layer gel paving technology in drug-eluting stent, Int. Conf. on Computational Biomechanics and Biology, Plzen, Czech Republic, September 2007.

27. A. DiCarlo, P. Nardinocchi, **L. Teresi**, M. Tringelova. The cardiovascular system as an adaptive system: modelling and computational issues, Int. Conf. on Computational Biomechanics and Biology, Plzen, Czech Republic, September 2007.

28. A. Leone, **L. Teresi**. Numerical study of aeroelasticity of sails, Proc. European COMSOL Conference 2006, Milan ,Italy, October 2006.

29. A. Di Carlo, P. Podio Guidugli, **L. Teresi**. On a Mathematical model of Twisted Multiwall Carbon Nanotubes, Proc. VIII Congress of Italian Society of Applied and Industrial Mathematics (SIMAI), Baia Samuele (Rg) Italy (2006).

30. A. Di Carlo, S. Naili, S. Quiligotti, **L. Teresi**. Modeling Bone Remodeling, Proc. European FEMLAB Conference, Stockholm, Sweden, October 2005. Ed. Jacob Ystrom, 51-55, Comsol, Stockholm, Sweden. (ISBN 91-631-6853-7).

31. P. Nardinocchi, **L. Teresi**. Stress Driven Remodeling of Livin Tissues, Proc. European FEMLAB Conference, Stockholm, Sweden, October 2005. Ed. Jacob Ystrom, 51-55, Comsol, Stockholm, Sweden. (ISBN 91-631-6853-7).

32. A. Di Carlo, M. Monteferrante, P. Podio-Guidugli, V. Sansalone, **L. Teresi**. How (and why) Twisting Cycles Make Individual MWCNTs Stiffer, XVIII Int. Winterschool on Electronic Properties of Novel Materials, American Institute of Physics Conf. Proc. 688, Kirchberg, Austria (2004).

33. A. DiCarlo, P. Nardinocchi, **L. Teresi**. Creep as passive growth, Proc. Eight Pan American Congress of Applied Mechanics, La Habana, Cuba (2004). (ISBN: 959-7056-20-8).

34. A. Di Carlo, P. Nardinocchi, G. Pontrelli, **L. Teresi**. A Heterogeneous Approach for Modelling Blood Flow in an Arterial Segment, Fifth International Conference on Simulations in Biomedicine, Ljubljana, Slovenia, 2003. WIT Press, Eds: Z.M. Arne, C.A. Brebbia, F. Solina, V. Stankovski. (ISBN: 1-85312-965-8, ISSN: 1465-3222).

35. A. Di Carlo, P. Nardinocchi, **L. Teresi**. How Residual Stress and Curvature Influence the Response of Blood Vessels, Proc. V World Congress on Computational Mechanics, Wien, Austria (2002).

36. P. Nardinocchi, **L. Teresi**. The Influence of Initial Stresses on the Mechanics of Blood Vessels, Proc. 12th Int. Conference on Mechanics in Medicine and Biology, Lemnos, Greece (2002).

37. P. Nardinocchi, A. Tiero, **L. Teresi**. Identificazione dei Parametri Costitutivi di Travi Affini, Proc. XV Congress of Italian Association of Theoretical and Applied Mechanics (AIMETA), Taormina, Italy (2001).

38. P. Nardinocchi, A. Tiero, **L. Teresi**. An Intrinsic Theory of Affine Rods, Proc. IV EuroMECH Conference, Metz, France (2000).

39. A. Di Carlo, P. Nardinocchi, **L. Teresi**. How to Model Blood Flow in Distensible Vessels, Proc. 3rd International Conference on Engineering Aero-Hydroelasticity, Prague, Czech Republic (1999), Eds. J. Horacek, I. Zolotarev, Praga, 141145. (ISBN: 80-85918-49-8).

40. A. Tiero, **L. Teresi**. The Saint-Venant Problem for Beam-like Modular Trusses, in Il problema di de Saint-Venant: aspetti teorici e applicativi. Giornata Lincea; Atti Convegni Lincei n. 140, Accademia Nazionale dei Lincei, edited by Bardi Editore (1998).

41. A. Tiero, **L. Teresi**. Lie Groups and Compatibility Conditions in non Linear Mechanics, Proc. Modern Group Analysis VII (N. H. Ibragimov, K. Razi Naqvi, E. Straume eds., MARS Publishers, SYMMETRY Foundation), Nordfjordeid, Norway (1997).

42. P. Nardinocchi, A. Tiero, **L. Teresi**. Affine Bodies and Lie Groups, Proc. Modern Group Analysis VII (N. H. Ibragimov, K. Razi Naqvi, E. Straume eds., MARS Publishers, SYMMETRI Foundation), Nordfjordeid, Norway (1997).

43. A. Tiero, **L. Teresi**. Continuum Modeling of Beam-like Modular Trusses using Solutions of Saint-Venant type, Proc. First Eur. Conf. on Structural Control, (A. Baratta, J. Rodellar eds.), Barcelona, Spain, Series on Stability, Vibration and Control of System, series B, vol. 13, pp. 577-584 (1996).

44. A. Tiero, **L. Teresi**. Soluzioni alla Saint-Venant per Travature Reticolari Modulari, Proc. XII Congress of Italian Association of Theoretical and Applied Mechanics (AIMETA), Naples, Italy. Eds F. Giannini & Figli, Napoli, Italy (1995).

Poster presentations

1. Assessment of Left-Atrial three dimensional speckle tracking strain and time to peak strain parameters in patients with hypertrophic cardiomyopathy, Congress of European Society of Cardiology, Barcelona, Spain, 2014. (with A. Evangelista, A. Madeo, P. Piras, F. Giordano, G. Giura, S. Gabriele, F. Re, P. Puddu, C. Torromeo).

2. Discovering deformation: a new method for studying shape change trajectories. Abstract Book of the 7th World Congress on Biomechanics, Boston, USA, 2014 (L. Teresi, V. Varano, S. Gabriele, P. Piras, I.L. Dryden).

3. Modeling Tools for Soft Robotics. Proceedings of 2013 International Workshop on Soft Robotics and Morphological Computation (eds. Fumiya Iida Surya G. Nurzaman Kohei Nakajima Luzius Brodbeck), Bio-Inspired Robotics Lab, ETH Zürich Ascona, Switzerland, 2013 (with A. Lucantonio, P. Nardinocchi, M. Pezzulla, V. Pugliese).

4. Ribbon Formation in Twist-Nematic Elastomer. Proc. of European COMSOL Conference, Milan, Italy, October 2012 (with V. Varano).

5. Mechano-Electric Coupling Effects in Reentrant Arrhythmia, Cardiac MEC and Arrhythmias 2010, Oxford, UK, September 2010 (with C. Cherubini, S. Filippi, A. Gizzi, P. Nardinocchi).

6. Electromechanical Modeling of Cardiac Tissues, 16th European Society of Biomechanics Congress, Lucerne, Switzerlan, July 2008 (with C. Cherubini, S. Filippi, P. Nardinocchi).

7. Dynamics of Director Rotation in Nematic Elastomers, 4th International Liquid Crystal Elastomer Conference, Ljubljana, Slovenia, September 2007 (with A. DeSimone, A. DiCarlo).

8. Electromechanical Models of Excitable Tissues, 4th Int. Workshop on Cardiac Mechanoelectric Feedback and Arrhythmias, Oxford, Great Britain (2007) (with C. Cherubini, S. Filippi, P. Nardinocchi).

9. Stress Driven Growth of Soft Tissues, Workshop on Driven States in Soft and Biological Matter, International Center for theoretical Physics (ICTP), Trieste, Italy (2006) (with A. DiCarlo, P. Nardinocchi).

10. Soft Elasticity of Nematic Elastomers, Workshop on Driven States in Soft and Biological Matter, International Center for theoretical Physics (ICTP), Trieste, Italy (2006) (with A. De Simone, A. DiCarlo).

11. A comprehensive meso-mechanical theory of twisted MWCNTs, XX International Winterschools on Electronic Properties of Novel Materials, Kirchberg, Austria (2006) (with A. DiCarlo, P. Podio-Guidugli).

12. Modeling Bone Remodeling, Femlab Conference, Paris, France (2005) (with A. Di Carlo, S. Naili, S. Quiligotti).

13. Microtwists & Nanodefects, IMA Workshop on Atomic Motion to Macroscopic Models, University of Minnesota, Minneapolis, USA, (2005) (with A. DiCarlo, M. Monteferrante, P. Podio-Guidugli, V. Sansalone).

14. Nanometer-scale Mechanical Devices Incorporating Multiwalled CNTs: a Twisting Riddle, 6th International Conference on Nanotechnology in Carbon, Batz-sur-Mer, France, (2004) (with A. DiCarlo, M. Monteferrante, P. Podio-Guidugli, V. Sansalone).

15. How (and why) Twisting Cycles Make Individual MWCNTs Stiffer, XVIII International Winterschools on Electronic Properties of Novel Materials, American Institute of Physics Conf. Proc. 688, Kirchberg, Austria (2004) (with A. Di Carlo, M. Monteferrante, P. Podio-Guidugli, V. Sansalone).

16. Micro-relaxation kinetics mimicked by macro-remodelling, II Colloque Franco-Italien sur la Mcanique des Matriaux, Dijon, Francia, dicembre 2003.

17. Mechanics of Biological Vessels, Workshop on Bioengineering of Man, IUSM (Istituto Universitario di Scienze Motorie), Roma, Italia, novembre 2003.

18. Qualche simulazione rilassante, Congresso del Progetto Inter-gruppo INDAM: Modelli matematici e problemi analitici per materiali speciali, Salò, Italia, luglio 2003.

19. Modellazione meccanica delle pareti vascolari, I Workshop Nazionale BioFluMen (Biological Fluid Mechanics Network), Roma, Italia, giugno 2000.

20. Solutions of Saint-Venant type for modular truss beams, First Italian-French-Polish Conference on Theoretical and Applied Mechanics, Università degli Studi "Roma Tre" (1995).

Scientific conferences

- *Stress-Free Morphing*, APS March Meeting, organized by American Physical Society, Boston, USA, March 48, 2019.

- *Modeling and Simulation of Hygroscopic Behavior of Wood*, 3rd Workshop Hygroscapes, University Roma Tre, Rome, Italy, January 21-25, 2019.

- *The Virtual Aquarium: Simulations of Fish Swimming*; 9th China-Italy Colloquium on Applied Mathematics, Palazzo Bernabei, Assisi, Italy June 12 15, 2018.

- *Shape Analysis for 3D Cardiac Imaging*; INdAM Workshop Mathematical and Numerical Modeling of the Cardiovascular System, Rome, April 16-19, 2018.

- *Shape Analysis for Cardiac Imaging*; 3D Day 2018, Dept. Mathematics, Università degli Studi Tor Vergata Roma, February 21, 2018.

- *Heart-Motion Deformetrics*; Workshop Maths from the Boby, Dept. Mathematics & Physics, Università Cattolica del Sacro Cuore, Brescia, Italy, May 29-31, 2017.

- *On the effects of cavitation in hydrogel-based structures*; XXIV ICTAM (Int. Congress Theoretical and Applied Mechanics), Montreal, Canada, August 21-26, 2016.

- *Simulation-based Design of Implants for Orthodontic Anchorage*; 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, MiCo - Milan, Italy, August 25-29, 2015.

- *Experimental and Theoretical Investigations of the Mechanical Activity of Left Ventricle via Principal Strain Lines*; ESMC 2015 (European Solid Mechanics Conference), Madrid, Spain, July 6-12, 2015.

- *Comparing Shape Trajectories of Biological Soft Tissues in the Size-and-shape Space*; BIOMAT 2014, Stefan Banach Int. Mathematical Center - Institute of Mathematics, Bedlewo, Poland, November 2-8, 2014.

- *Electro-mechanics of Cardiac Tissues in Bio-hybrid Systems*; 7th World Congress of Biomechanics, Boston, Massachusetts, USA, July 6-11, 2014.

- *Anisotropic swelling in fibrous materials*; 17th U.S. National Congress on Theoretical and Applied Mechanics, Michigan State University, Lansing, USA, June 15-20, 2014.

- *Modelling Tools for Soft Robotics*; 2013 International Workshop on Soft Robotics and Morphological Computation Centro Stefano Franscini Ascona, Switzerland, July 14-19, 2013.

- *Modeling Anisotropic Myocardial Contractions*; Dynamics Days XXXIII, Madrid, Spain, June 3-7, 2013.

- *Non-homogeneous and Anisotropic Swelling of Polymer Gels*; CIMTEC - 4th International Conference on Smart Materials, Structures, Systems, Montecatini, Italy, June 10-14, 2012.

- *Modelling Tools for Soft Robotics*; OCTOPUS-EVRYON-WSK-Tng Summer School on Smart Materials, Sensors and Actuators within Embodied Intelligence System, Rome, Italy, June 24-29, 2012 (**invited talk**)

- *Distortion induced shape formation in liquid crystal elastomers*; SICL (Sociatà Italiana Cristalli Liquidi) Meeting, Rome, Italy, June 21-23, 2012.

- *Anisotropic Diffusion in Swelling Polymer Gels*; 2012 SIAM Annual Meeting, Minneapolis, USA, July 9-13, 2012.

- *Multiphysics Modeling of Swelling Gels*; European COMSOL Conference, Milan, Italy, October 10-12, 2012.

- *Ribbon Formation in Twist Nematic Elastomers*; European COMSOL Conference, Milan, Italy, October 10-12, 2012.

- *Gels, Cells, and the Engines of Motion*; New Materials and New Problems in Continuum Mechanics, Society for Natural Philosophy 50^{th} Annual Meeting, Udine, Italy, October 22-24, 2012.

- *Distortion-Induced Shapes in Nematic-Elastomers*; Mechanics of soft materials and tissues: modeling, simulation and experiments, SISSA, Trieste, Italy, May 7-9, 2012 (**invited talk**).

- *Motion Analysis of Left Ventricle*; Workshop The Heart Tissue: Modeling and Equations, Università Cattolica del Sacro Cuore, Brescia, Italy, May 4, 2012.

- *Some Considerations on Cardiac Electro-Mechanics*; Workshops on Mathematics and Mechanics of Biological Assemblies and Soft Tissues, Politecnico di Milano, Italy, February 2012.

- *Myocardial contractions, from clinical studies to theoretical modeling*; SeMS - Seminar Series on Modelling & Simulation, Sapienza, Università di Roma, Italy, November 2011 (**invited talk**).

- *Numerical Experiments for Thermally-induced Bending of Nematic Elastomers with Hybrid Alignment (HNEs)*; European COMSOL Conference, Stuttgart, Germany, October 26-28, 2011.

- *Coupling between mass density and director arrangement in Nematic Liquid Crystals*; European COMSOL Conference, Stuttgart, Germany, October 26-28, 2011.

- *Mechanical Modeling of Muscles*, Corso di Modellistica dei Sistemi Fisiologici, Università dell'Aquila, Italy, May 2011 (**invited talk**).

- *Biomechanical Modeling of the Left Ventricular Torsion and Function*; ICES Seminar, University of Texas at Austin, USA, August 2010 (**invited talk**).

- *Simulation of Deformation Processes in Left Ventricle during Cardiac Cycle*; IV European Conference on Computational Mechanics (ECCM 2010), Palais des Congrès, Paris, France, May 17-21, 2010.

- *Passive and Active Deformation Processes of 3D Fibre-Reinforced Caricatures of Cardiovascular Tissue*; Eur. COMSOL Conference, Milan, Italy, October 2009.

- *Computational Modeling of the Electromechanics of Cardiac Muscle Tissues*; IV International Conference on Computational Bioengineering, Bertinoro, Italy, September 2009.

- *A mechanical modeling of cardiac pressure-volume loops*; XIX AIMETA Conference, Ancona, Italy, September 14-17, 2009.

- *Modelling the Active Response of Excitable Tissues: a Fibred Caricature of the Left Ventricle*; ESMC 2009 7th EUROMECH Solid Mechanics Conference (MS 12 - Modeling of Biological Materials), Lisbon, Portugal, September 7-11, 2009.

- *On the dynamics of mesogen remodelling in nematic elastomers: the regime of small elastomer strain and large nematic rotation*; COSSERAT + 100 Int. Conf. on the legacy of Théorie des Corps Déformables by Eugéne and François Cosserat in the centenary of its publication, Paris, France, July 2009.

- *Passive and active Deformation Processes in Cardiac Tissue*; III Int. Conf. on Computational Methods for Coupled Problems in Science and Engineering, Ischia, Italy, June 2009 (**invited talk**).

- *Pressure-volume diagram and the cardiac contraction*; GMA09 (Gruppo di Meccanica dei Materiali AIMETA), Politecnico di Milano, Italy, January 2009.

- *Electro-Mechanical Coupling in the Cardiac Muscle*; Dip. Matematica, Politecnico di Milano, Italy, January 2009 (**invited talk**).

- *Numerical simulation of nematic-gel dynamics using finite elements: coupling elasticity, electrostatics and mesogen rotation*; ACE09 - 5th Workshop on Advanced Computational Electromagnetics, Accademia dei Lincei, Roma, Italy, January 12-14, 2009 (**invited talk**).

- *Modeling Active Contraction in Excitable Tissue*; Acta Piophysica Romana, Università Roma Tre, Italy, April 2008.

- *On the mechanical response of fiber-reinforced incompressible non-linearly elastic pipes*; 11th EUROMECH-MECAMAT Conf. Mechanics of microstructured solids: cellular materials, fibre reinforced solids and soft tissues; Dept. of Mathematics, Università di Torino, Italy, March 10-14, 2008.

- *Dynamics of director remodeling in nematic elastomers*; 2nd Symposium on Mathematical Modeling, Mechanics & Materials, CISM, Udine, Italy, January 2008.

- *Adaptive Response of Blood Vessels: Mathematical Modeling and Computer Simulation*; 9th US National Congress on Computational Mechanics, San Francisco, USA, July 22-27, 2007.

- *Topological Curation for Accurate Micro-mechanical and Mesoscopic Modeling of Trabecular Bone*; 9th US National Congress on Computational Mechanics, San Francisco, USA, July 2007.

- *Electro-mechanical Coupling in Nematic Gels*; Institute for Computational Engineering and Sciences, University of Texas at Austin, USA, June 2007 (**invited talk**).

- *Nematic Elastomers*; Centro Linceo Interdisciplinare Beniamino Segre, Accademia Nazionale dei Lincei, Rome, January 2007 (**invited talk**).

- *Quantum-mechanical and continuum modeling of multiwall carbon nanotubes*; Multiphysics 2006, Maribor, Slovenia, December 2006.

- *On the Biomechanics of Growth*; Thermec 2006 5th International Conference on Processing & Manufacturing of Advanced Materials, Vancouver, Canada, July 4-8, 2006.

- *Transmission Phenomena Across Highly Conductive Interfaces*; VIII Congress of Italian Society of Applied and Industrial Mathematics (SIMAI), Baia Samuele (Rg) Italy, May 2006.

- *Photomechanics of Polymeric Films*; Multiphysics Meeting, Milano, Italy, October 2005.

- *Stress Driven Remodeling of Living Tissues*; European Femlab Conference, Stockholm, Sweden, October 2005.

- *Adaptive Remodeling of Arterial Walls*; Congress on Biomechanics of Man 2004, Czech Society of Biomechanics, Sumava, Czech Republic, November 2004.

- *Material remodeling of biological tissues using Femlab*; "Femlab Seminars", Sapienza, Università di Roma, Italy, October 2004.

- *Models of Striated Muscles*; VII Congress of Italian Society of Applied and Industrial Mathematics (SIMAI), Venezia, Italy, September 2004.

- *Biomechanical Growth Laws for Arterial Walls*; VII Congress of Italian Society of Applied and Industrial Mathematics (SIMAI), Venezia, Italy, September 2004.

- *Material Remodelling: a Comprehensive Format for Modelling Smart Materials*; ECCOMAS 2004, Jyvaskyla, Finlandia, July 2004.

- *Twisting carbon nanotubes*; Summer College on Science at the Nanoscale, ICTP, Trieste, June 2004.

- *On the torsional stiffening of multiwalled carbon nanotubes*; Centro Ricerche Enea "Casaccia", UTM Materiali e Nuove Tecnologie, March 2004.

- *Creep as Passive Growth*; 8th Pan American Congress of Applied Mechanics, La Habana, Cuba, January 2004.

- *Models of compliant prestressed tube-like vessels*, invited lecture at Department of Mechanics, University of West Bohemia, Plzen, Czech Republic, March 2003.

- *Micro-relaxation kinetics mimicked by macro-remodelling*; II Colloque Franco-Italien sur la Mécanique des Matèriaux, Dijon, France, November 2003.

- *Mechanics of Biological Vessels*; Workshop on Bioengineering of Man, IUSM (University Institute of Motor Sciences), Roma, Italy, October 2003.

- *Qualche simulazione rilassante*; Mathematical Models and Analytical Problems for Smart Materials, Workshop of National Institute for Mathematical Studies (INdAM), Saló, Italy, July 2003.

- *Models of compliant tube-like vessels*; VI Congress of Italian Society of Applied and Industrial Mathematics (SIMAI), Chia Laguna, Italy, June 2002.

- *Rods with affine cross-section vs. 3-D Cauchy continua, as an example of constitutive identification*; Dip. Scienze dell'Ingegneria Civile, Università degli Studi "Roma Tre", Rome, Italy, June 2000.

- *Gruppi di Lie e condizioni di compatibilità in cinematica non lineare*; Dip. Ingegneria Civile, Università degli Studi di Roma "Tor Vergata", Rome, Italy, May 1996.

- *Sull'uso dei metodi variazionali per la deduzione della teoria lineare delle piastre*; Dip. Ingegneria Civile, Università degli Studi di Roma "Tor Vergata", Rome, Italy, April 1995.

- *Deduzione delle teorie non lineari delle piastre*; Dip. Meccanica ed Aeronautica, Università degli Studi di Roma "La Sapienza", Rome, Italy, January 1995.

- *Sulla deduzione delle equazione delle piastre di Von Kármán*; Dip. Meccanica ed Aeronautica, Università degli Studi di Roma "La Sapienza", Rome, Italy, January 1994.

- *Analisi modale delle travature reticolari modulari*; XVIII Scuola Estiva di Fisica Matematica, Ravello, Italy, September 1993.

Skills and Qualification

- Excellent Matlab programming.

- Excellent modeling skills in COMSOL Multiphysics.

Awards and Honours

- "Best Paper Award" for the paper *The virtual aquarium: simulation of fish swimming* presented at the European COMSOL Conference, Grenoble, France, October 2015.

- "Best Poster Award" for the poster *The virtual aquarium: simulation of fish swimming* presented at the European COMSOL Conference, Grenoble, France, October 2015.

- "Best Poster Award" for the poster *Ribbon Formation in Twist-Nematic Elastomer* presented at the European COMSOL Conference, Milan, Italy, October 2012.

- "Outstanding Paper Award" issued by the Japanese Society of Liquid Crystal for the paper *Thermally Driven Giant Bending of Liquid Crystal Elastomer Films with Hybrid Alignment*, published on *Macromolecules*, vol. 43, pp. 4362-4369 (2010);

- Best graduate thesis award offered by the Italian Association of Aeronautics and Astronautics (1991).

Rome, November 19, 2019 Luciano Teresi